(5,424,948); claims 9-10 and 12-15 under 35 USC 103(a) as being obvious over Cook et al in view of Kull (5,681,015); claim 18 under 35 USC 103(a) as being unobvious over Cook et al in view of Matsuoka (5,544,057); and claims 19-20 under 35 USC 103(a) as being unobvious over Cook et al in view of Roselli et al (5,718,487).

The Applicant disagrees with the Examiner's rejections for the following reasons. The present invention is directed to a method and apparatus for substantially achieving a minimum stopping distance of a freight train consist without incurring any significant detrimental wheel slide. The method of claim 1 requires the following steps:

(a) preprogramming preselected information into a computer disposed on a freight locomotive;

(b) determining a speed of such freight train consist;

(c) communicating a signal that is indicative of said speed determined in step (b) to such computer disposed on such freight locomotive;

(d) determining in such computer a pressure that can be applied to brake cylinders which will maintain substantially maximum adhesion between wheels being braked and rail surfaces in contact with such wheels;

(e) communicating a signal representative of such pressure determined in step (d) to a pressure control valve in fluid communication with such brake cylinders; and

(f) maintaining a maximum pressure on such brake cylinders that will stop such train consist in a shortest possible distance while simultaneously substantially preventing wheel slide.

The apparatus of claim 11 requires the following elements:

(a) a program having preselected information disposed in a computer disposed on a freight locomotive;

(b) a speed sensing means disposed on at least one of such locomotive and a freight car for determining a speed of such freight train consist;

(c) a means connected to said speed sensing means for communicating a signal that is indicative of said speed to such computer disposed on such freight locomotive, so that such program can determine a pressure that can be applied to brake cylinders which will maintain substantially maximum adhesion between wheels being braked and rail surfaces in contact with such wheels; and

(d) a means connected to such computer for communicating a signal representative of such pressure determined by said program to a pressure control valve disposed in fluid communication with such brake cylinders and maintaining a maximum pressure on such brake cylinders that will stop such train consist in a shortest possible distance while simultaneously substantially preventing wheel slide.

Note that both claims 1 and 11 are specifically directed to a method and apparatus for achieving a minimum stopping distance of a ***freight train consist***. The claims also specifically require that the ***rail to wheel adhesion*** is a significant factor in achieving

this minimum stopping distance and that significant detrimental wheel slide should be avoided.

The Examiner rejects claims 1 and 11 as being anticipated by Cook et al. The Applicant disagrees with this rejection as Cook et al is directed to a brake energy balancing system for magnetic levitation trains-see col. 1, lines 26+ and col. 2, lines 17-19. Cook et al fails to state (as required under 35 USC 102(b)) or even suggest (as required under 35 USC 103(a)) that the brake energy balancing system disclosed therein could be converted for use with a freight train consist.

Also, the Examiner states in the Office Action that Cook teaches at col. 4, lines 40-47 "determining in the computer a pressure that can be applied to the brake cylinders that will maintain maximum adhesion between the wheels and the rail surface". The Applicant is unable to locate any reference to maintaining maximum adhesion between the wheels and the rail surface in Cook. Furthermore, magnetic levitation trains do not run along a rail in the same manner as do freight trains. Magnetic levitation trains comprise a vehicle body which is provided with two or more longitudinally extending rows of electromagnets which cooperate with respective armature rails extending continuously along the track so that a magnetic attraction force is generated between the electromagnet core and the armature rails by means of which the vehicle is suspended from the track while a gap is maintained between the armature rail and the suspension electromagnets. Thus, it is not seen by Applicant how the teachings of Cook et al can be

concerned with the rail to wheel adhesion and minimizing wheel slide during braking as required by the claims.

For these reasons, Applicant respectfully request withdrawal of the 35 USC 102(b) rejection as Cook et al fails to anticipate each and every feature recited in claims 1-3, 5-8, 11 and 16-17.

As to the various rejections of claims 4, 9-10, 12-15 and 18-20 under 35 USC 103(a), since these rejections are based upon Cook as the primary reference, it is requested that these rejections be withdrawn for the reasons stated above. One having ordinary skill in the art would not be motivated to modify a reference directed to a magnetic levitation train to arrive at a method and apparatus for substantially achieving a minimum stopping distance of a freight train consist without incurring any significant detrimental wheel slide as recited in the claims.

Accordingly, Applicant respectfully requests withdrawal of the various 35 USC 103(a) rejections over claims 4, 9-10, 12-15 and 18-20 as Cook et al neither alone nor in combination with the cited references fails to render these claims obvious.

In view of the foregoing arguments and amendments, Applicant believes that the application meets all applicable statutory and regulatory requirements. Accordingly, Applicant respectfully requests allowance of all claims remaining in the application. If the Examiner has any questions regarding this amendment and/or

believes that a telephone interview would assist in the advancement of this case to allowance, he/she is invited to contact the undersigned Agent for Applicant.

Respectfully submitted,

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